



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/560,428	03/17/2006	Atsushi Sakuda	2005_1981A	8774

52349 7590 01/18/2007
WENDEROTH, LIND & PONACK L.L.P.
2033 K. STREET, NW
SUITE 800
WASHINGTON, DC 20006

EXAMINER

TRIEU, THERESA

ART UNIT	PAPER NUMBER
----------	--------------

3748

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	01/18/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/560,428

Applicant(s)

SAKUDA ET AL.

Examiner

Theresa Trieu

Art Unit

3748

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 December 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input checked="" type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. <u>Jan. 8, 2007</u> . |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>See Continuation Sheet</u> . | 6) <input type="checkbox"/> Other: _____. |

Continuation of Attachment(s) 3). Information Disclosure Statement(s) (PTO/SB/08), Paper No(s)/Mail Date :June 5, 2006, Feb. 7, 2006, Dec. 14, 2005.

DETAILED ACTION

Receipt and entry of Applicants' Preliminary Amendment filed on Dec. 14, 2005 is acknowledged.

Claims 3-5 have been amended. Claim 7 has been added. Accordingly, claim 1-7 are pending in this application.

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Specification

2. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

The following title is suggested: AN AIR SUPPLY DEVICE HAVING SEALANT ATTACHED TO BOTH SIDES OF ROLLING ELEMENTS OF BEARING SUPPORTING THE ORBITING SCROLL".

Claim Objections

3. Claims 1-7 are objected to, in that their subject matter needs to be incorporated into the specification and the drawings (i.e.: first, second and third grease-filled bearings).

4. Claim 6, page 5, line 1, "to claim," has been changed to -- to claim 4 --.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person

having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

5. Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yamazaki (patent Number 5,649,817) in view of Nawamoto et al. (Nawamoto) (Publication Number JP2002-130305).

Regarding claim 1, as shown in Fig. 1, Yamazaki discloses an air supply device comprising: a compression mechanism section having a stationary scroll 3 and an orbiting scroll 4 held in engagement with each other; a drive section 24 for driving the compression mechanism section; the compression mechanism section and the drive section having a common shaft 5a, 5b, by way of which the orbiting scroll is caused to undergo an orbiting motion with respect to the stationary scroll to thereby compress air sucked into the compression mechanism section; a plurality of rotation constraint members 14, 15, 15', 25a, 25b for preventing rotation of the orbiting scroll 4 about its own axis, but allowing the orbiting scroll to orbit relative to the stationary scroll; a plurality of first grease-filled bearings 13, 21 for rotatably supporting the common shaft 5a, 5b; a plurality of second grease-filled bearings 8, 9 for rotatably supporting the orbiting scroll; a plurality of third grease-filled bearings 15, 15' for rotatably supporting each of

Art Unit: 3748

the rotation constraint members. However, Yamazaki fails to disclose the second bearings having sealing material.

As shown in Figs. 1, 2 and 4, Yamazaki teaches that it is conventional in the art to utilize each of the second bearings having outer and inner rings 2; 1, a plurality of rolling elements 3 interposed between the outer and inner rings, and two sealing materials 5 disposed on respective sides of the plurality of rolling elements 3, each of the sealing materials having an inner end held in contact with the inner ring 1 and an outer end held in contact with the outer ring 2. It would have been obvious to one having ordinary skill in the art at the time the invention was made, to have utilized the sealing material, as taught by Nawamoto in the Yamazaki apparatus, since the use thereof would have reduced the friction of the rotation constraint members and prevented the leakage of grease in a sealed radial ball bearing.

6. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yamazaki in view of Nawamoto as applied to claim 1 above, and further in view of Ogawa et al. (Ogawa) (Publication Number JP 2001-073969).

The modified Yamazaki device discloses the invention as recited above; however, the modified Yamazaki fails to disclose a direction of an inner bent portion of the sealing materials.

As shown in Fig. 1, 2 and 4, Ogawa teaches that it is conventional in the art to utilize each of the sealing materials (31, 33, 35) has an inner bent portion that has been bent towards a low-pressure side from a high-pressure side. It would have been obvious to one having ordinary skill in the art at the time the invention was made, to have utilized the bending portion of the sealing materials according to the direction of the pressure, as taught by Ogawa in the modified

Art Unit: 3748

Yamazaki apparatus, since the use thereof would have prevented the leakage of grease from the sealing material of the bearings.

7. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yamazaki in view of Nawamoto as applied to claim 1 above, and further in view of Higuchi et al. (Higuchi) (Publication Number JP 2000-161372).

The modified Yamazaki device discloses the invention as recited above; however, the modified Yamazaki fails to disclose sealing materials made of the rubber.

Higuchi teaches that it is conventional in the art to utilize each of the rubber sealing materials 5. It would have been obvious to one having ordinary skill in the art at the time the invention was made, to have utilized the rubber sealing material, as taught by Higuchi in the modified Yamazaki apparatus, since the use thereof would have improved high temperature durability and waterproof/slurry resistance and reduced the cost.

8. Claims 4 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamazaki in view of Nawamoto as applied to claim 1 above, and further in view of Moroi et al. (Moroi) (Publication Number JP 2000-161372).

The modified Yamazaki device discloses the invention as recited above; however, the modified Yamazaki fails to disclose a groove being formed in the shaft of the crankpin/ in the plurality of recesses of the compression mechanism section.

As shown in Fig. 2, Moroi teaches that it is conventional in the art to utilize each of the rotation constraint members 150 comprises a crankpin 151 having an insertion portion inserted into an associated one of the bearings 152, the insertion portion having a groove 151c, 151d defined in a surface thereof; the compression mechanism section 110, 120 having a plurality of

Art Unit: 3748

recesses defined therein into each of which one of the bearings 152 is press fitted, each of the plurality of recesses having a groove 151c, 151d defined in an inner surface thereof. It would have been obvious to one having ordinary skill in the art at the time the invention was made, to have utilized the groove formed in the insertion portion/ in the plurality of recesses of the compression mechanism section, as taught by Moroi in the modified Yamazaki apparatus, since the use thereof would have improved the performance of the bearings.

9. Claims 6 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamazaki in view of Nawamoto as applied to claim 1 above, and further in view of Moroi et al. (Moroi) (Publication Number JP 2000-161372).

The modified Yamazaki device discloses the invention as recited above; however, the modified Yamazaki fails to disclose a groove having a width and a depth both in a range of 0.1 mm to 1.0 mm. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have utilized the range of the width/depth of the groove, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 220F.2d 454,456, 105 USPQ 233, 235 (CCPA 1955) (see MPEP §2144.05).

Prior Art

The IDS (PTO-1449) filed on June 5, 2006, Feb. 7, 2006 and Dec. 14, 2005 has been considered. An initialized copy is attached hereto.

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure and consists of eight patents: Yasui (U.S. Patent Number 4,655,617), Kajihara et al. (U.S. Patent Number 5,607,240), Sakuda et al. (U.S. Patent Number 6,887,051), Machida et al.

Art Unit: 3748

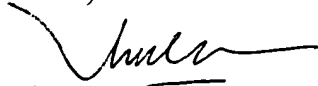
(Publication Number JP 02-277985), Shibayashi et al. (Publication Number JP 05-296168), Tsuchida (Publication Number JP 07-035064), Shibayashi et al. (Publication Number JP 07-054784) and Shibayashi et al. (Publication Number JP 07-332264), each further discloses a state of the art.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Theresa Trieu whose telephone number is 571-272-4868. The examiner can normally be reached on Monday-Friday 8:30am- 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas E. Denion can be reached on 571-272-4859. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

TT
January 8, 2007



Theresa Trieu
Primary Examiner
Art Unit 3748